



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

STEPHEN R. PRITCHARD
Secretary

ROBERT W. GOLLEDGE, Jr.
Commissioner

MassDEP
Bureau of Waste Prevention
Division of Consumer and Transportation Programs

310 CMR 7.36:
Transit System Improvements

**Background Document and Technical Support for Public Hearings on
the Proposed Amendments to the
State Implementation Plan for Ozone**

**Regulatory Authority: Massachusetts General Laws, Chapter 111,
Sections 142A through 142M**

November 2005

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APPENDICES

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Background Document and Technical Support For Public Hearing

To Consider Amendments to:

310 CMR 7.36: Transit System Improvements

October 2005

The Department of Environmental Protection (the Department) is proposing amendments to the Transit System Improvements Regulation, 310 CMR 7.36, and the State Implementation Plan (SIP) for ozone. The proposed amendments were requested by the Executive Office of Transportation (EOT) and include revisions to the transit projects required to be built by the Commonwealth as air quality mitigation measures for the Central Artery/Third Harbor Tunnel (CA/T) project. The proposed amendments also modify the delay and substitution procedures for transit projects included in the regulation.

I. INTRODUCTION

On August 10, 2005, the Secretary of EOT submitted to the Department a recommendation to revise the Transit System Improvements regulation, 310 CMR 7.36, and the SIP. (The Secretary's submittal is included in Appendix A.) The Secretary's recommendation is a result of a joint public process being conducted by the Department, EOT, the Massachusetts Bay Transportation Authority (MBTA), and the Boston Metropolitan Planning Organization (MPO) to reevaluate the outstanding transit commitments in 310 CMR 7.36, consistent with EOT's objective criteria for evaluating transportation projects and the MBTA's 2003 Program for Mass Transportation (PMT).

EOT's submittal, which was completed after consultation with the Boston MPO, made several recommendations, including:

- a. Removing the Arborway Restoration and the Red Line/Blue Connector as required projects and substituting projects listed in b., c., & d., below;
- b. Expanding the Green Line Extension project beyond what is currently required in the regulation by including service to the West Medford and Union Square areas for completion by 2014;
- c. Adding a requirement for the Fairmount Line Improvements/Stations Expansion Project for completion by 2011;
- d. Adding a requirement for 1,000 additional park and ride parking spaces serving commuter transit facilities in the Boston MPO region for completion by 2011; and
- e. Modifying the criteria for project delays and project substitutions.

II. BACKGROUND

Air Quality Mitigation Commitments for the Central Artery/Tunnel Project

In December 1990, the Executive Office of Transportation and Construction (EOTC) (now the Executive Office of Transportation), the Massachusetts Department of Public Works (MDPW) (now the Massachusetts Highway Department) and the Conservation Law Foundation (CLF) signed a Memorandum of Understanding (MOU), which committed EOTC and MDPW to implement air quality mitigation measures for the CA/T project. Among these measures was a list of transportation system improvement projects designed to maximize the use of mass transit. The MOU was endorsed by the Boston MPO as a proposed amendment to the SIP and was subsequently submitted to the Department. In response, the Department promulgated 310 CMR 7.36 and submitted the regulation to EPA as a SIP Revision. EPA approved the SIP revision in October of 1994.

While a number of projects that were included in 310 CMR 7.36 were completed on schedule, certain commitments were delayed and were not completed by the regulatory deadlines. As a result, the Department and the EOT entered into an Administrative Consent Order in September of 2000. The ACO addressed the project delays, established new dates by which certain actions would be completed, and required additional projects to compensate for noncompliance. The ACO was amended twice in May of 2002 and January 2005 to address additional compliance issues.

Reevaluation of the Three Remaining Transit Projects Required by 310 CMR 7.36

Three projects required by 310 CMR 7.36 are outstanding: the Green Line Arborway Restoration, the Red Line/Blue Line Connector, and the Green Line Extension to Ball Square/Tufts University. As a result of the MBTA's 2003 PMT and EOT's objective criteria for evaluating transportation projects, the Department, EOT, and the MBTA developed a process to reevaluate the three outstanding projects. (See Appendix B for a summary chart of the reevaluation process.) The Department, EOT, and the MBTA held three public meetings to take comments on the proposed process in December, February, and March in Boston, Jamaica Plain, and Somerville, respectively. After concluding the three public hearings and considering public comment, the next four steps of the re-evaluation process commenced, as proposed. On March 25, 2005, the Department provided to EOT the air quality goal for any potential project substitutions in 310 CMR 7.36 and the SIP. The air quality goal is discussed in Section VI. EOT then held two MPO consultation meetings, one public meeting, and then developed preferred alternatives to the three outstanding projects. The preferred alternatives are:

- Extension of the Green Line beyond Lechmere to the West Medford and Union Square areas;
- Fairmount Line improvements; and
- 1,000 additional park and ride parking spaces serving commuter transit facilities in Boston MPO region.

III. SUMMARY OF PROPOSED AMENDMENTS TO 310 CMR 7.00 & 7.36

Definitions:

A definition of “Boston Metropolitan Planning Organization” is added. This definition is included in 310 CMR 7.00.

Revisions to the List of Required Projects:

Subsection (2) of the regulation is modified as follows:

- The requirement for the Green Line Arborway Restoration in 310 CMR 7.36(2)(d) is deleted.
- The requirement for the Green Line Extension to Ball Square/Tufts University in 310 CMR 7.36(h)1 is deleted.
- The requirement for the Blue Line connection from Bowdoin Station to the Red Line at Charles Station in 310 CMR 7.36(h)2 is deleted.
- A requirement for 1,000 new park and ride parking spaces serving commuter transit facilities in the Boston MPO region is added to 310 CMR 7.36(g)1. These spaces are required to be completed by December 31, 2011.
- A requirement for Fairmount Line improvements and stations expansions is added to 310 CMR 7.36(g)2. These improvements and expansions are required to be completed by December 31, 2011.

This project consists of expansion of existing stations, a new station at Newmarket, Four Corners, Talbot Avenue, and Blue Hill Avenue, and improved service to increase ridership.

- A requirement for Green Line service beyond Lechmere with service to the West Medford and Union Square in Somerville areas is added to 310 CMR 7.36(h). This project is required to be completed by December 31, 2014.

As described in the Secretary of EOT’s August 10, 2005 recommendation to revise the SIP, this project consists of two branches extending from Lechmere to the West Medford and Union Square areas in Medford and Somerville.

Project Delay and Project Deadline Extensions:

A provision has been added in 310 CMR 7.36(3)(c), which allows the Department to approve project delays beyond the three-year limit in the existing regulation if other measures are implemented that result in emission reductions in non methane hydrocarbons (NMHC), carbon monoxide (CO), and nitrogen oxides (NOx) equal to or greater than the required project. This

provision recognizes that there are legitimate reasons that cause high priority projects to be delayed more than three years and that this should not result in the project being substituted on a permanent basis. The provision also requires that if a project is delayed for more than three years, mitigation projects are required after three years of delay.

Certain transit projects required by 310 CMR 7.36 have been delayed beyond three years and DEP has required other projects to be implemented to mitigate for these delays. DEP is seeking comment on whether the completion dates listed in the regulation for these projects should be modified to reflect the new completion dates.

Substitution Criteria:

Subsection (4) of the existing regulation requires that, in order to substitute a required transit system improvement project in the regulation, EOT must first demonstrate that the project is infeasible due to engineering, environmental, or economic impacts. Following an infeasibility determination, EOT must petition the Department to accept the substitute project and demonstrate that the alternative project achieves equal or greater emission reductions of NMHC, CO and NO_x and would provide a greater improvement in air quality for CO and NO_x in the area where the required project was to have been implemented, in both the short and long term.

The Secretary of EOT's August 10, 2005 recommendation to revise the SIP suggests that "the language requiring any alternative project to achieve equal or greater emissions reductions be retained, but that the language "in the area where the required project was to be implemented" be modified since it does not necessarily reflect the optimal method of achieving either air quality benefits or transportation benefits."

The Secretary's recommendation also indicates that the requirement for an infeasibility determination "creates an unrealistic standard." EOT recommends that language be included in the proposed regulations that "speak to a project no longer being an appropriate transportation project due to factors including, but not limited to, engineering, environmental, community, or economic impacts, adverse impacts to the existing transit network, and a failure to meet generally accepted cost effectiveness criteria."

EOT's goal is to provide a reevaluation process that allows for the best transportation projects to proceed while taking into account accepted transit criteria.

In response to EOT's recommendation, the proposed amendments to Subsection (4), Substitute Transit System Improvement Projects, allow projects required by Subsection (2) of the regulation to be substituted if the following conditions are met:

1. The required project is removed from the Regional Transportation Plan and Transportation Improvement Program (TIP) for the Boston region;
2. The substitute project is included in the Regional Transportation Plan and the TIP for the Boston region;
3. EOT demonstrates to the Department that the substitute project achieves equivalent or greater reductions in NMHC, CO, and NO_x emissions in the Project Area; and
4. EOT demonstrates to the Department that any delays in emission reductions are mitigated.

5. DEP approves the substitute project, in writing.

These substitution criteria are intended to allow flexibility for EOT to implement mass transportation projects that, in the view of regional, state, and federal transportation agencies, provide optimal transportation benefits and that meet or exceed the Commonwealth's SIP commitments.

For the purpose of the projects proposed to be added to the regulation (i.e., 1,000 new Commuter Rail parking spaces in the Boston MPO region, Fairmount Line improvements and stations expansions, and Enhanced Green Line service from Lechmere with service to West Medford and Union Square in Somerville), the regulation allows these projects to be substituted with other projects in the Project Area. The Project Area is defined as the geographic area of the City of Boston, City of Cambridge, City of Somerville, and the City of Medford. (See 310 CMR 7.36(4)(a)(5).

The intent of the proposed definition of Project Area in 310 CMR 7.36(4)(a)(5) is to ensure that air quality benefits of potential substitute projects occur in the urban core.

A copy of the proposed revisions to 310 CMR 7.36 is included as Appendix C.

IV. AIR QUALITY IMPACTS

The existing regulation requires that, for any substitute project, equivalent or greater air quality benefits be achieved. In the Department's discussions with EOT and the MBTA on developing the public process to reevaluate the three outstanding transit commitments, the Department indicated that any potential substitute projects would be required to achieve equal or greater emission reductions than the listed projects, pursuant to the requirements of the regulation and the anti-back sliding provisions of the Clean Air Act.

Of the three outstanding commitments, only the Green Line Arborway Restoration had been analyzed for its air quality benefits. Therefore, EOT performed additional analysis of the two remaining projects and estimated the air quality benefits that would accrue if the projects were completed. EOT submitted this analysis to DEP. See Table 1, below.

Table 1: Air Quality Benefits for Three Outstanding Transit Projects

| Project | Hydrocarbons (kg/day) | Carbon Monoxide (kg/day) | Nitrogen Oxides (kg/day) |
|---|--------------------------|--------------------------------|--------------------------------|
| Arborway Green Line Extension | 6.22 | 98.49 | 2.00 |
| Blue Line/Red Line Connector | 15.00 | 173.00 | 31.00 |
| Green Line Extension to Medford Hills | 20.00 | 222.00 | 40.00 |

On March 25, 2005, in a letter to the Secretary of EOT, the Department approved the air quality benefits associated with the three outstanding projects, but required an upward adjustment of 10% for potential substitutes to account for any potential margin of error in the air quality analysis methods. The approved air quality benefits for any substitutes, including the 10% adjustment is included in Table 2.

Table 2: Approved Air Quality Benefits

| Project | Hydrocarbons (kg/day) | Carbon Monoxide (kg/day) | Nitrogen Oxides (kg/day) |
|---|--------------------------|--------------------------------|--------------------------------|
| Arborway Green Line Extension | 6.84 | 108.34 | 2.20 |
| Blue Line/Red Line Connector | 16.50 | 190.30 | 34.10 |
| Green Line Extension to Medford Hills | 22.00 | 244.20 | 44.00 |
| Total | 45.34 | 542.84 | 80.30 |

After the air quality benefits were approved, EOT performed an analysis of the preferred alternative and estimated that the alternative would result in air quality benefits greater than the three outstanding projects. See Table 3, below.

Table 3: Air Quality Benefits of EOT's Preferred Alternative

| Project | Hydrocarbons (kg/day) | Carbon Monoxide (kg/day) | Nitrogen Oxides (kg/day) |
|--|--------------------------|--------------------------------|--------------------------------|
| Green Line Extension to West Medford and Union Square in Somerville | 83 | 1016 | 114 |
| Fairmount Line Improvements/Stations Expansion | 1 | 15 | 2 |
| 1000 Commuter Rail Parking Spaces in the Boston MPO Region | 16 | 166 | 21 |
| Total | 100 | 1197 | 137 |

Based on the air quality benefits estimated for the preferred alternative, the substitute projects will result in greater emission reductions for all pollutants.

Documentation of the modeling and analytic techniques used to estimate the air quality benefits of the exiting SIP projects and proposed substitute projects is included as an attachment to the Secretary of EOT's August 10, 2005 submittal to the Department.

V. ECONOMIC IMPACTS

EOT has estimated the costs for the preferred alternative projects as indicated below.¹ A March 14, 2005 letter to the Department from the Secretary of EOT indicates that state bond funds have been identified to pay for the remaining CA/T commitments.

Green Line Extension to West Medford and Union Square in Somerville

| | |
|----------------|--------------------|
| Capital Cost | \$459 million |
| Operating Cost | \$8.6 million/year |

Fairmount Line Improvements

| | |
|----------------|----------------|
| Capital Cost | \$67 million |
| Operating Cost | \$295,000/year |

1000 Commuter Rail Parking Spaces

Cost information is not available.

VI. OTHER PROGRAM IMPACTS

Massachusetts Municipalities & Proposition 2½

Pursuant to Executive Order 145, the Department must assess the fiscal impact of new regulations on the Commonwealth's municipalities. This Executive Order was issued in response to Proposition 2-1/2, MGL c. 29 s. 27C(a), which requires the state to reimburse municipalities for costs incurred as a consequence of new state law and regulations.

The amendments to the regulation and the SIP will not require cities and towns to significantly expand services or expend local resources. The regulations will have a positive impact on affected municipalities by increasing transportation services and access.

Massachusetts Environmental Policy Act

The proposed regulation is "categorically exempt" from the Massachusetts Environmental Policy Act (MEPA) regulations, 301 CMR 11.00, because the regulation will result in equivalent or greater emission reductions. All reasonable measures have been taken to minimize adverse impacts.

¹ From "Background Information for MPO Consultation on SIP Transit Commitments, May 26, 2005"

Agricultural Impacts

M.G.L. c. 30A, Section 18, requires state agencies to evaluate the impact of programs on agriculture within the Commonwealth. The Department has determined that the regulation will not adversely impact agriculture in Massachusetts.

VII. PUBLIC PARTICIPATION

As required by M.G.L. c. 111, Section 142K and M.G.L. c. 30A the Department gives notice and provides the opportunity to review background and technical information at least 21 days prior to proposing the regulation amendments at a public hearing. To assure more adequate notice for processing a rule as an amendment to the SIP, formal notice will be issued 30 days before the public hearing. The hearing will be held in Boston.